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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,211	12/11/2003	Naiyong Jing	59455US002	7997

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EXAMINER

MCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/733,211	JING ET AL.	
	Examiner	Art Unit	
	Sanza L. McClendon	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,10-12,15-17,20-29,32-34,37,38 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7,10-12,15-17 and 20-22 is/are allowed.
- 6) ☒ Claim(s) 1-7,10-12,15-17,20-29,32-34,37-39 and 42-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-6/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the Amendment received on June 13, 2005, the examiner has carefully considered the amendments.

Terminal Disclaimer

2. The terminal disclaimer filed on June 13, 2005 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date any patent granted on Application 10/712,590 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

3. Applicant's arguments, see amendment, filed June 13, 2005, with respect to claims 1-43 have been fully considered and are partially persuasive. The rejection of claims 1-2, 4-6, 10-11 under 35 USC 102(b) as being anticipated by Asawa et al (JP 54-052690) has been withdrawn. Asawa et al does not teaches the method as found in the instant claims since the polymer of Asawa et al differs from the instant since the polymer to be crosslinked has a pendent iodine group instead of a bromine groups. However, the crosslinked polymer of Asawa et al appears to be the same polymer. Therefore claims 23-24, 27-28, and 32-33 still remained rejected.

The provisional rejection of claims 1-7, 10-12, 15-17, 20-21 and 23-29, 32-34, 37-39, and 42-44 under 35 USC 103(a) as being unpatentable over 10/712,590 (USPGPUB 2005/0107490) in view of JP 54-052690 still stands. The methods of crosslinking found in ^{2005/0107490} ~~10/712,590~~ are still deemed obvious, while the polymers formed from said method appear to be the same as instantly claimed.

An anticipation rejection is warranted for claims 23-30, 32-34, 36-39, and 42-44 under 35 USC 102(e) as being anticipated over 10/712,361 (PGPUB 2005/0107488). The polymers formed from said method appear to be the same—see below.

Reference (PGPUB 2005/0107488) and (USPGPUB 2005/0107490) additionally qualifies as prior art under another subsection of 35 U.S.C. 102, and therefore, is not disqualified as prior art under 35 U.S.C. 103(c).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 23-24, 27-28, and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Asawa et al (JP 54-52690).

Asawa et al teaches improved fluorine-containing cation exchange membranes. Said membranes are obtained by casting and then crosslinking a fluoro-polymer using ultraviolet radiation. Said polymer is prepared by copolymerization of an iodine-containing vinyl-ether, a fluorinated olefin, and a fluorine-containing monomer having an ion exchange group or functional group convertible to an ion exchange group. Said membrane is formed by cast said monomer solution and crosslinking using ultraviolet radiation. Said crosslinked polymer and polymer electrolyte membranes appear to anticipate the instantly claimed polymer membranes. Since there is no functional limitation asserted to be critical for establishing novelty in the claimed subject matter, the examiner deems these appear to be the same polymer electrolyte membrane, since it has been recognized by the courts that where the prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product.

6. Claims 23-30, 32-34, 36-39, and 42-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Yandrasits et al (US 2005/0107488).

Yandrasits et al teaches polymer electrolytes crosslinked by e-beam. Said polymer has a backbone derived from tetrafluoro-ethylene monomer having a first pendent group, as found in the abstract. Said membrane is formed by casting and then crosslinking. Said membrane can have thickness from 90 microns or less, preferably from 60 microns or less, most preferably from 30 microns or less-see abstract. It is additionally taught that said polymer might be imbibed into a porous supporting matrix prior to crosslinking, wherein said useable matrices can be found in paragraph [0041].

The crosslinked polymer membrane appears to anticipate the membranes of claims 23-30, 33-34, 36-39, and 42-44, since the second pendent groups of the instant claims will be liberated once crosslinking takes place. Because there is no functional limitation asserted to be critical for establishing novelty in the claimed subject matter, the examiner deems these appear to be the same

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polymer electrolyte membrane, since it has been recognized by the courts that where the prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7, 10-12, 15-17, 20-29, 32-34, 37-39, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yandrasits et al (US 2005/0107490) in view of Asawa et al (JP 54-052690).

Yandrasits et al teaches polymer electrolytes crosslinked by e-beam. Said polymer has a backbone derived from tetrafluoro-ethylene monomer having a first pendent group, as found in the abstract, and second pendent group, such as Br, I, or Cl. Said membrane is formed by casting and then crosslinking by electron beam radiation to form a membrane. Said membrane can have thickness from 90 microns or less, preferably from 60 microns or less, most preferably from 30 microns or less-see abstract. It is additionally taught that said polymer might be imbibed into a porous supporting matrix, wherein said useable matrices can be found in paragraph [0043] or a crosslinking agent can be added to said polymer prior to crosslinking—[0042]. The crosslinked polymer membrane appears to anticipate the membranes of claims 23-30, 33-34, 36-39, and 42-44 because the halogen groups will be liberated upon crosslinking. Since there is no functional limitation asserted to be critical for establishing novelty in the claimed subject matter, the examiner

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deems these appear to be the same polymer electrolyte membrane, since it has been recognized by the courts that where the prior art discloses product that appears to be either identical with or only slightly different from product claimed in product-by-process claim; Patent Office can require applicant to prove that prior art products do not necessarily or inherently possess characteristics of his claimed product. While Yandrasits et al teaches using electron beam for crosslinking, it is known in the art to crosslink similar polymers using ultraviolet radiation.

Asawa et al teaches improved fluorine-containing cation exchange membranes. Said membranes are obtained by casting and then crosslinking a fluoro-polymer using ultraviolet radiation. Said polymer is prepared by copolymerization of an iodine-containing vinyl-ether, a fluorinated olefin, and a fluorine-containing monomer having an ion exchange group or functional group convertible to an ion exchange group. Said membrane is formed by cast said monomer solution and crosslinking using ultraviolet radiation.

Yandrasits et al and Asawa et al are analogous art because they are from the same field of endeavor that is the art of cation exchange resins. Therefore it would have been within an artisan of ordinary skill in the art at the time of the invention to use ultraviolet radiation as taught by Asawa et al for the crosslinking methods of Yandrasits et al. The motivation would have been a reasonable expectation of obtaining a crosslinked polymer matrix in absence of evidence to the contrary.

EXAMINER'S AMENDMENT

9. Authorization for this examiner's amendment was given in a telephone interview with Phillip Dahl on June 27, 2005.

The application has been amended as follows:

Please cancel claims: 8-9, 13-14, 18-19, 30-31, 35-36, and 40-41.


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Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sanza L. McClendon

Examiner

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